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Rec'd Oct 1, 1964

SPECIFICATION HANDBOOK

for

DESIGN AND CONSTRUCTION OF

neorama

neorama

CELLULAR SIGN SYSTEMS

Jefferson
ELECTRIC COMPANY
SINCE 1915
BELLWOOD, ILLINOIS 60104

neorama*

LICENSED BY

Jefferson ELECTRIC COMPANY

Bellwood, Illinois 60104

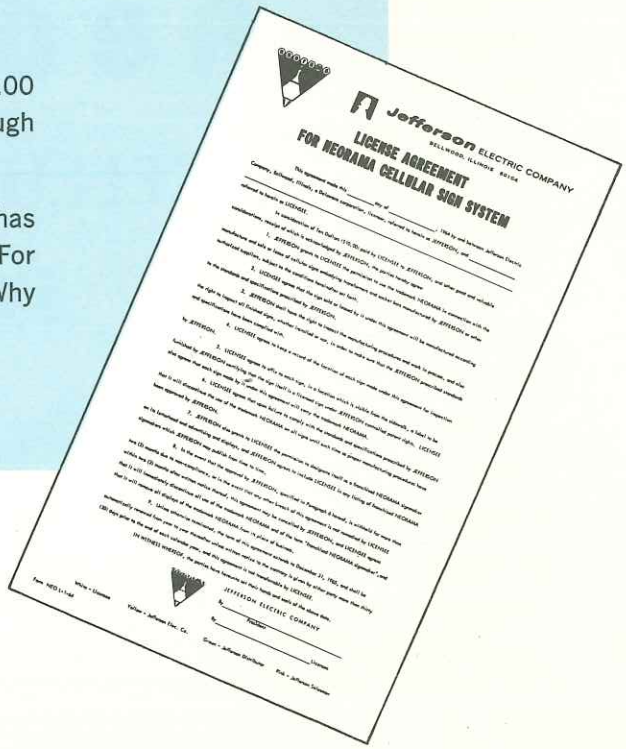
*PATENT APPLIED FOR

HOW TO BECOME A FRANCHISED MANUFACTURER OF NEORAMA SIGNS

Joining the rapidly growing list of Neorama sign manufacturers is a simple procedure. Jefferson distributors are supplied with Neorama License Agreements (Form No. NEO L-1-64). The agreement presents, in detail, the requirements that Jefferson Electric feels must be met and maintained in the manufacture of this new concept in sign construction. It also tells you what you may expect from Jefferson in return.

The license fee is a nominal $10.00 which is payable to Jefferson through the Jefferson Distributor.

Your sign supply distributor has copies of the "License Agreement For Neorama Cellular Sign System." Why not ask him for a copy.


Jefferson ELECTRIC COMPANY

LICENSE AGREEMENT FOR NEORAMA CELLULAR SIGN SYSTEM

JEFFERSON NEORAMA DISTRIBUTORS

ACME NEON ACCESSORY
Buffalo, New York

AMERICAN NEON SUPPLY CO.
Kansas City, Missouri

CENTRAL NEON SUPPLY CO.
Omaha, Nebraska

COASTAL SALES COMPANY
El Paso, Texas

COASTAL SALES COMPANY
Los Angeles, California

COASTAL SALES CO., NORTHWEST
Portland, Oregon

COASTAL SALES CO., NORTHWEST
Seattle, Washington

ELECTRICAL PROD. SUPPLY CO.
Los Angeles, California

GENERAL NEON EQUIPMENT CO.
Philadelphia, Pennsylvania

INTERNATIONAL NEON & FLUOR.
Chicago, Illinois

LA SALLE SIGN & ARTIST SUPPLY
Detroit, Michigan

MIDWEST SIGN SUPPLY COMPANY
St. Paul, Minnesota

MURPHY NEON SUPPLY COMPANY
Denver, Colorado

NEO SIGN SUPPLY COMPANY
Oklahoma City, Oklahoma

NEON ACCESSORY CO.
Chicago, Illinois

NEON ENGINEERING, INC.
Atlanta, Georgia

NEON ENGINEERING, INC.
Cincinnati, Ohio

NEON ENG. & SUPPLY CO.
Wichita 12, Kansas

NEON & FLUORESCENT SUPPLY CO.
St. Louis, Missouri

NEON MATERIALS COMPANY
Chicago, Illinois

NEON SIGN SUPPLY CO.
Milwaukee, Wisconsin

NEW ENGLAND SIGN SUPPLY CO.
Boston, Massachusetts

PAN AM SUPPLY
Miami 47, Florida

PAN AM SUPPLY
Tampa, Florida

PETERSON SUPPLY COMPANY
San Francisco, California

PIONEER NEON SUPPLY CO.
Atlanta, Georgia

PIONEER NEON SUPPLY CO.
Pittsburgh, Pennsylvania

PIONEER SUPPLY COMPANY
Detroit, Michigan

PROGRESSIVE SUPPLY COMPANY
New York, N. Y.

REECE SUPPLY COMPANY
Houston, Texas

REECE SUPPLY COMPANY
Dallas, Texas

REECE SUPPLY COMPANY
San Antonio, Texas

REGIONAL SIGN SUPPLIERS
Salt Lake City, Utah

SOUTHERN SIGN SUPPLY, INC.
Baltimore 17, Maryland

TERMINAL ELECTRIC COMPANY
Minneapolis, Minnesota

UNDERWOOD SUPPLY COMPANY
Los Angeles, California

neorama

WHAT IT IS and HOW IT WORKS

WHAT IS NEORAMA?

The first major development in the electric sign industry since the introduction of plastic! The *first truly effective use of neon in plastic signs*—by means of a completely new* technique.

■ *Never before* — **CONSTRUCTION EASY AS THIS!** Only six components! Neorama simplifies construction, cuts manufacturing lead time, cuts labor costs.

■ *Never before*—**MAINTENANCE LOW AS THIS!** Long-life neon tubing cuts maintenance calls down to the minimum. Neorama signs are stronger, tighter.

■ *Never before*—**ANIMATION VERSATILE AS THIS!** Neorama signs can be flashed, scintillated, wiped! Your opportunity for dramatic creativity!

■ *Never before*—**TRUE COLORS LIKE THIS!** Color flexibility! True color in the tubes permits extensive variation. Any number of cut-offs. The complete neon-mercury tubing color spectrum is your Neorama "palette."

■ *Never before*—**DESIGN SLIM AS THIS!** Neorama signs need a depth of only four inches. Less depth means less weight, less storage, lower shipping cost, lower labor costs for erection.

■ *Never before*—**SAVINGS LIKE THIS!**—Save on sign erection! Wire in minutes instead of hours. Save on lamp and socket replacements, parts inventory, storage, shipping, labor, all-around maintenance.

HOW DOES NEORAMA WORK?

The Neorama sign utilizes U-shaped neon tubing connected at the top with a receptacle bar which has electrode housings spaced at predetermined intervals. The tubing is encased in V-3 plastic faced back to back, forming hexagonal "cells" which provide reflection and refraction for exceptional brightness. The relatively less intense light source can be placed closer to the outside sign surface than ever before possible.

*PAT. PENDING

Contact your Jefferson representative or distributor for full details

Jefferson
ELECTRIC COMPANY
BELLWOOD, ILLINOIS 60104
Area Code 312 Tel. MA 6-7161

THE NEORAMA SIGN

(SEE DRAWING BELOW)

① The "cells" formed by placing two faces of white V-3 plastic back-to-back provides six reflecting angles in each cell and is the key to the multiplication of light, concealment of the neon tube, and the production of the vivid, dramatic colors that are "Neorama".
It is highly important that the "V's" touch together to provide proper reflection and separation of color.

② A 15 mm tube is centered in each hexagonal "cell". One U-tube illuminates two adjoining cells.
The color potential of Neorama is unlimited. In addition to the sharply defined color cut-off that can be achieved from cell to cell, an equally sharp color cut-off can be accomplished within a single cell by simply splicing-in the desired length of various types of tubing.

③ The insulated receptacle bar is one of Neorama's outstanding features: All necessary secondary wiring has been completed internally. As electrode housing transformer is attached to receptacle bar mounting studs, secondary wiring connections are automatically completed.

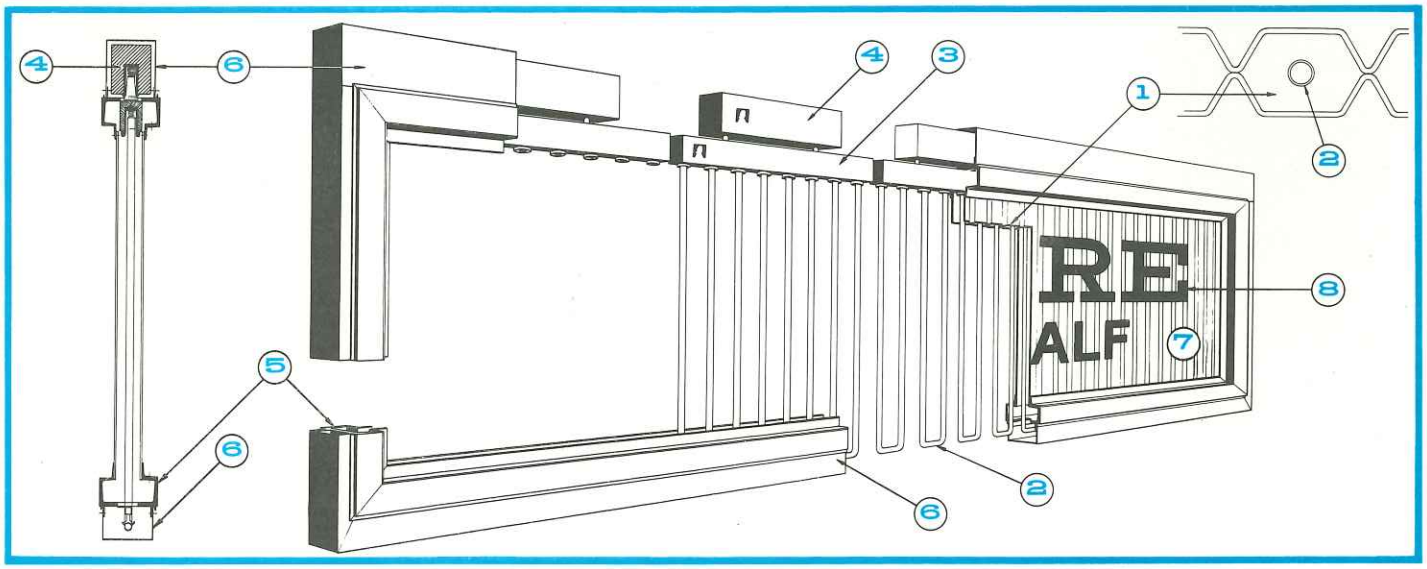
④ The transformer has been designed by Jefferson's engineering staff specifically for the "cellular" system. Recessed housings receive the connecting posts of the receptacle bar, providing trouble-free electrical hook-up and savings in both shop labor during fabrication and replacement costs during the life of the signs.
The transformer and the receptacle bar are double-nutted to the web of the extrusion or to an angle-iron support if extrusions are not used. Double-nutting provides easy removal of the transformer without disturbing the socket bar below when servicing. This also provides necessary spacing between the receptacle bar and the transformer. All transformers are 45 M.A. for increased light output and vividness of color.

⑤ The aluminum extrusion shown was designed during the development of the cellular system. It is equivalent in shear and tensile strength to a 2" x 2" x 3/16" angle-iron. Slots are provided to receive the capping without any "hemming" to prevent waving and requires a minimum of sheet metal screws to secure it.
This extrusion is available in 16 foot lengths, mill finish, from any Jefferson distributor. If you desire, he will provide fabricated extrusion for any sign: cut, mitered, punched and corner-plated, ready for 8-bolt assembly in your plant.

⑥ Capping is easily formed by two brake lines using sheet aluminum, paint-grip sheet metal or porcelain enamel, if color is desired by the designer.
Depth of capping at top is determined by the transformers and/or flashers it covers. Capping on the ends may vary in depth to conform to any fastener, or hanging method desired. Bottom section of capping covers the bases of U-tubes and provides easy access for removal of tubes. Adequate drain holes should be drilled in bottom capping for drainage.

⑦ Visible lighted opening (copy area) is determined in height by the neon footage permitted by the transformer. (See Sign Fabrication Data Chart.)
Horizontal width of the visible opening is determined by the combined lengths of the receptacle bars used, plus 1" added to the sum total.

⑧ Cut-out applied letters, or pictorials, should be of opaque plastic to permit the desired color against the white background by day, and silhouetting against the illuminated background by night. The use of translucent letters is recommended only after careful experimentation with contrasting backgrounds.



MATERIAL LIST

3' x 6' NEORAMA SIGN (OVERALL MEASUREMENT 49⅞" x 80¾")

- 22 Lin. ft. Aluminum extrusion
- 4—corner plates 2 x 2 x 3/16"—3¼" long
- 18 sq. ft. sheet aluminum or sheet metal
- 40 sq. ft. V-3 plastic
- 3—Neorama 9000-45 ma transformers
- 3—Neorama socket bars
- 84 ft. 15 mm neon tubing—24 electrodes
- 12 Non-slip tube supports
- Variable lengths of strap-iron or square aluminum tubing for hangers
- 2—1" x 1½" angle clips
- 2—6/32 x ½" screws with nuts
- 22—No. 4 x ½ st. steel sheet metal screws
- 12—¼/20 hex nuts
- 4—⅜" x 1¼" bolts with nuts
- 16—¼/20 x ¾" bolts with nuts
- 16 ft. No. 14 wire
- 6—74B wire nuts
- 1—½" chase nipple with locknut

NEORAMA FOR STANDARD TYPES

Ⓐ Single faced signs are easily mounted with supporting "L" straps concealed by the capping.

Two faces are required to complete the hexagonal cell. The use of V-3 plastic is more economical for the backing sheet than painted formed metal.

Surface of sign next to building should be painted with white acrylic paint to reflect more light forward through face of sign.

Ⓑ Standard strap hangers are bolted to frame for mast arm erection from wall of building or supporting pole, set in concrete.

Ⓒ A center-pole installation of the Neorama sign is relatively simple.

The smaller pipe, or heavy strap-iron, cradles the sign with two through-bolts to the sign frame on each side. The bottom bolt on each side is removable to allow sign to pivot out for easy removal of bottom capping and tubing. Sign may project above the cradle more than shown if desirable for design purposes.

Ⓓ In free-standing pylon installations, sections may be "stacked" with access plate between frames as shown, or completely separated with top cap of each section removable for service.

Supporting frame may be "H" members or round poles as desired.

Ⓔ Neorama modules are "stacked" on supporting side-pole.

Connecting primary wiring extends through pole and speller-type primary flashers can easily be used.

This type installation is not recommended for large modules due to the absence of side guy support.

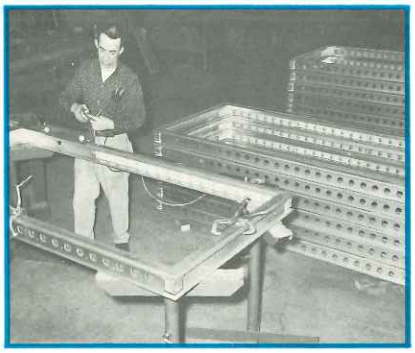
Ⓕ The conventional "gate-hinge" method of erection is commonly used to good advantage. This type of mounting is dependent upon local sign erection codes.

Ⓖ Modules of Neorama are very effective for roof, parapet, wall, or canopy installation.

Care should be used wherever possible in placement to enable tubing to be removed and replaced through bottom of sign without the necessity of removing face of module.

Speller, or "wiping", flashing action is most effective with the color range possible with Neorama.

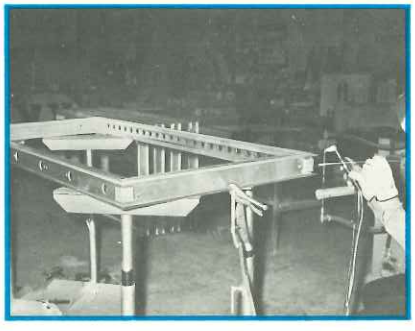
Receptacle bars being installed in 3′ x 6′ frame. Note 1⅝" holes punched in web for U-tubes. When tube supports are mounted above web, hole punching not required.

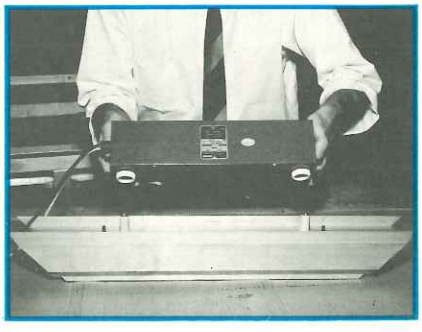


Tube supports being positioned to hold U-tube against spring-type housings in receptacle bar. Only one support is needed for each U-tube.

NEORAMA ON THE PRODUCTION LINE

Mitered corners are reinforced with aluminum angle plates, welded to frame. Plates may also be bolted if so desired.

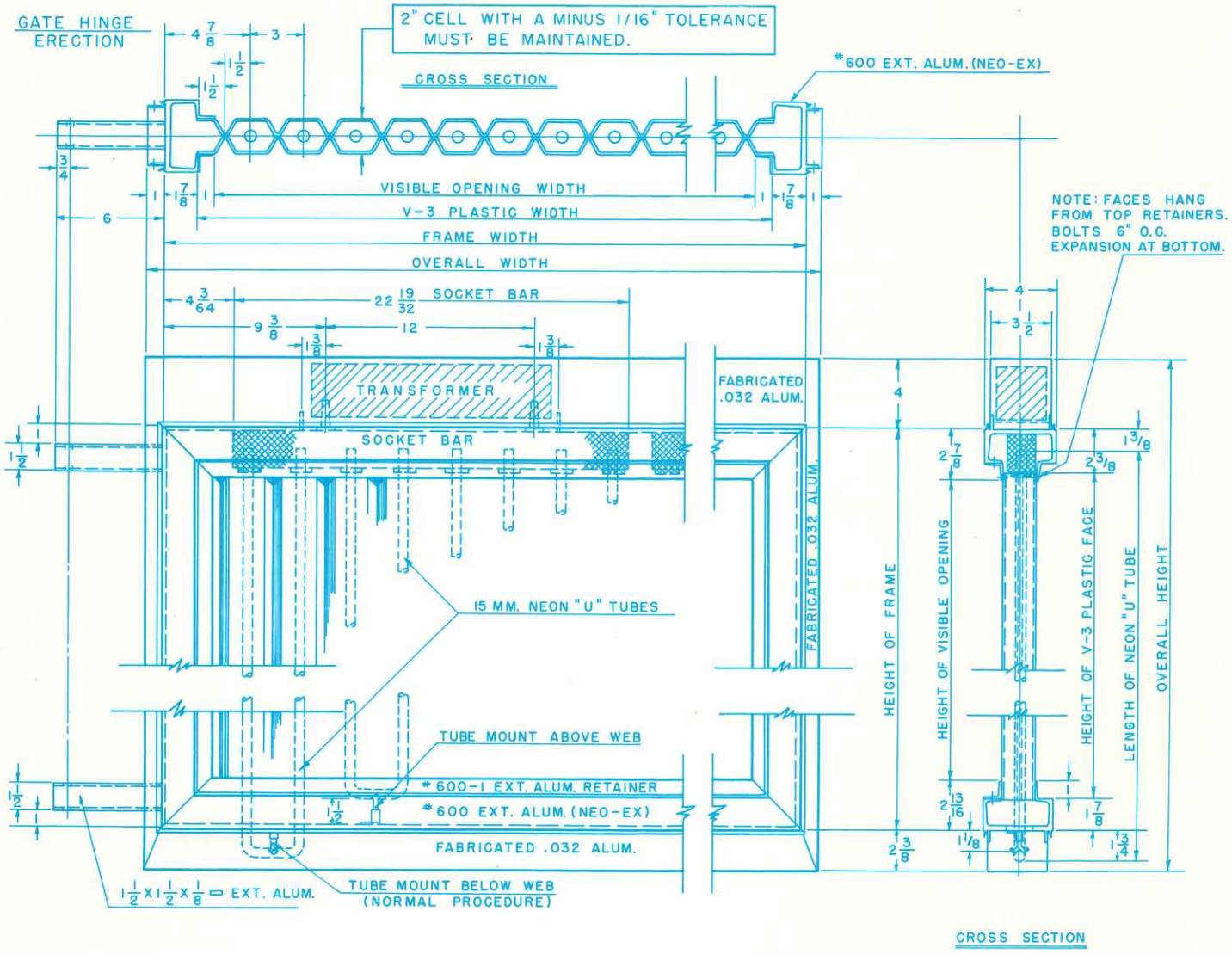




As transformer is attached to receptacle bar mounting studs, secondary wiring connections are automatically completed.

Frames now ready for capping and installation of tubing and faces. Usual procedure is to position one face, insert the tubing and close in with other face and retainer molding.

SHOP DRAWING OF A TYPICAL NEORAMA SIGN
INCORPORATING NEO-EX ALUMINUM EXTRUSION



The table below provides all necessary measurements for fabricating Neorama signs with the "Neo-Ex" extrusion. Length of U-tube given is for use with the metal receptacle bar now available.

SIGN FABRICATION DATA

	TRANSFORMER	Neon	6000V-45MA	7500V-45MA	7500V-45MA	9000V-45MA	9000V-45MA	10,000V-45MA*
		Mercury	6000V-45MA	6000V-45MA	7500V-45MA	9000V-45MA	9000V-45MA	
HEIGHTS	Footage Per Socket Bar**		20′	24′	28′	32′	36′	36′
	Referral Size		2′6″	3′	3′6″	4′	4′6″	4′6″
	Frame		22¼″	28¼″	34¼″	40¼″	46¼″	46¼″
	V-3 Plastic Face		18″	24″	30″	36″	42″	42″
	Neon "U" Tubes		22⅝″	28⅝″	34⅝″	40⅝″	46⅝″	46⅝″
	Overall		28⅝″	34⅝″	40⅝″	46⅝″	52⅝″	52⅝″
	Visible Copy Opening		22½″	22½″	28½″	34½″	40½″	40½″
WIDTHS	Referral Size		2′	2′	4′	6′	8′	8′
	Frame		30¾″	30¾″	54¾″	78¾″	102¾″	102¾″
	V-3 Plastic Face		27″	27″	51″	75″	99″	99″
	Overall		32¾″	32¾″	56¾″	80¾″	104¾″	104¾″
	Visible Copy Opening		25″	25″	49″	73″	97″	97″
	Number of Socket Bars Req.		1	1	2	3	4	0***

* Transformer for Flashing Signs
** All Footage Includes Electrodes
*** Incorporated in Flashing Transformer

MORE ABOUT THE NEORAMA SIGN . . . . . .

NEORAMA TUBE PUMPING . . .

Maximum Neorama sign performance will be achieved if the following recommended tube pumping procedures are followed:

1. Evacuate the tubes to one micron or less. This can be achieved through the use of a **Rough-In pump,** and **final pump** which includes a **diffusion pump.**
2. We also suggest you incorporate in your pumping system a commercially available **thermal couple gauge** or a **Perrani-type gauge** for checking the evacuating factor.
3. The loading chart on Page 6 is calculated on a basis of having both neon and mercury 15 mil tubing filled with gas to a 10 mm pressure.

FLASHING . . .

Flashing, scintillating, wiping—anything you can now do with the neon sign, you can do with this dynamic new type of sign.

These flasher transformers are designed to incorporate the receptacle bar and, hence, the receptacle bar—as a separate component—is not required. Jefferson transformer #728-001-002 has four individual primaries built into it. This enables you to flash the four individual neon U-Tubes that this transformer accommodates for each two-foot length of the sign.

For a typical six-foot sign, you would require 3 #728-001-002 transformers—no receptacle bars —and one twelve point flasher. Flashers are commercially available to fit within the narrower cross section of the Neorama sign.

ANGLE-IRON AND SHEET METAL CONSTRUCTION OF NEORAMA SIGNS . . .

The cellular sign system does not require the use of aluminum extrusions in fabricating.

Any sign plant which prefers a sheet metal, or stainless steel, "skin" over an angle-iron frame can readily construct Neorama signs by this method.

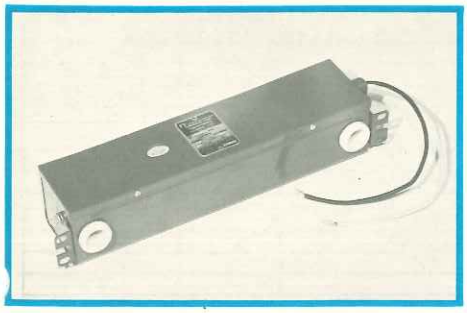
The construction details may vary according to the individual plant's equipment, local building code requirements, Underwriters' water tests and individual engineering standards.

The first Neorama sign was built using angle-iron covered with 24 ga. stainless steel and quite a number have been produced since the introduction of Neorama at the Las Vegas convention of N.E.S.A.

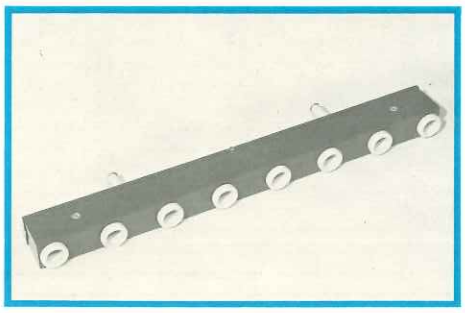
Any of several conditions may dictate the use of these materials in preference to aluminum extruisons.

SPECIAL APPLICATIONS . . .

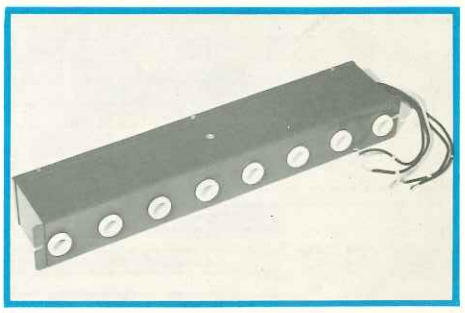
The Neorama sign principle lends itself well to special applications, including **Production Window Signs, Production Outdoor Signs,** or any sign that requires special configuration of receptacle bars, or special size transformer. To solve special application problems, contact your Neorama supply distributor, your local Jefferson sales representative, or contact our factory staff in Bellwood, Illinois.



Electrode Housing Transformer for special use in Neorama signs. Listed by UL in 45 MA designs for 6000 V, 7500 V and 9000 V application.

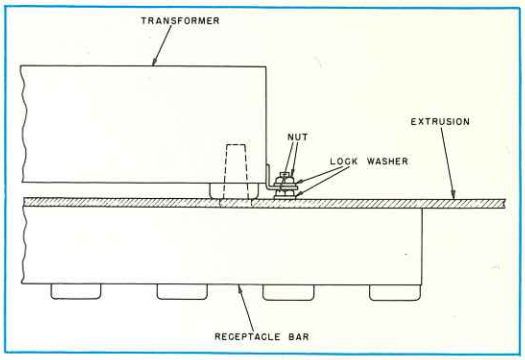


Pre-wired receptacle bar contains all high voltage secondary wiring—provides labor savings. Listed with Underwriters' Labs.



Specially designed, UL Approved transformer for use with commercially available Neorama flashers. Handles four U-Tubes, provides 2700 volts to each tube.

NEORAMA CONSTRUCTION NOTES and AIDS



DOUBLE NUTTING:

The practice of "double nutting" is strongly recommended to protect the porcelain in the transformer and the receptacle bar. This also provides the necessary spacing between the receptacle bar and the transformer; and it facilitates servicing, in that the transformer can be removed without removing the receptacle bar.

WATER PROTECTION:

Standard procedure should be followed to protect the sign: adequate drain holes to eliminate collection of moisture and "capping" the sign will help. Neorama signs can be further protected by using a rubber gasket, designed to fit the contours of the V-3 plastic. This gasketing material is now available at Neorama distributors.

VARYING WEATHER CONDITIONS:

All Jefferson Neorama components are engineered and manufactured to resist deteriorating atmospheric conditions such as: salt air, chemically contaminated air, and flash climatic changes.

MAINTAINING THE NEORAMA SIGN:

Because of its basic cellular construction, gasketed Neorama signs are less accessible to dust and dirt accumulation. Because of this, and since the neon tube has considerably longer lamp life than the fluorescent lamp, the Neorama sign requires less interior maintenance. For exterior cleaning, follow the standard accepted practices for the cleaning of plastic signs.

OPAQUE LETTERS:

The use of opaque letters is recommended until you have experimented with translucent plastic letters with contrasting color backgrounds.

SINCE 1915

Jefferson
ELECTRIC COMPANY
BELLWOOD, ILLINOIS 60104

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